The HITIDE Initiative

Benefits of HITIDE

- Accelerates pace of IT innovation
- Improves health data interoperability and exchange
- Accelerates partnering among federal agencies as well as private partners
- Promotes knowledge exchange
- Leverages assets more efficiently
- Promotes private-public-academic partnerships
- Fosters innovation for modern information systems
- Showcases federal healthcare delivery systems
- Stimulates job development in the area of scientific methodologies and technology

Health Information Technology Innovation and Development Environments

Today HITIDE represents an "Active Innovation Ecosystem" that fosters collaboration of federal and private partner Health IT (HIT)/Electronic Health Record (EHR) innovations, leveraging the use of in-kind development testbeds, which simulate a federated environment of disparate information technology systems.

The alliance of testbeds represents real-life Health IT/EHR production systems and is intended to provide a prototyping "playing field" for interoperability innovations and support many areas of opportunity. By leveling the proverbial "playing fields" among federal and private sector partners, there is the expectation for an *accelerated pace of IT innovation* toward modern technological advances.

Background

This initiative is effectively a response to, but not limited by, the President's Council of Advisors on Science and Technology (PCAST) report of 2010 on Networking and Information Technology Research and Development (NITRD), which *recommends the use of "development testbeds" in order to support innovation in the areas of health IT*, population health, emergency preparedness, computational science, genomics, clinical trials research, etc. This effort is seen as a way to inspire networking across all federal agencies and private sector partners, as well as stimulate job development in the area of scientific methodologies and technology.

From a mission/vision perspective, HITIDE's administration fits strategically within the NITRD Program, which has 18 federal agency members, and has been promoting collaboration among federal and private researchers for 20 years. The NITRD Health IT R&D Senior Steering Group has co-chairs from the National Science Foundation (NSF), National Institutes of Health (NIH), and the Office of the National Coordinator for Health IT (ONC), thus creating the necessary bridge to the Department of Health and Human Services (HHS). HITIDE's status is being reported at the White House Office of Science and Technology Policy (OSTP) as a quarterly update along with the Virtual Lifetime Electronic Record (VLER), Blue Button, and integrated Electronic Health Record (iEHR).

Identifying the Need

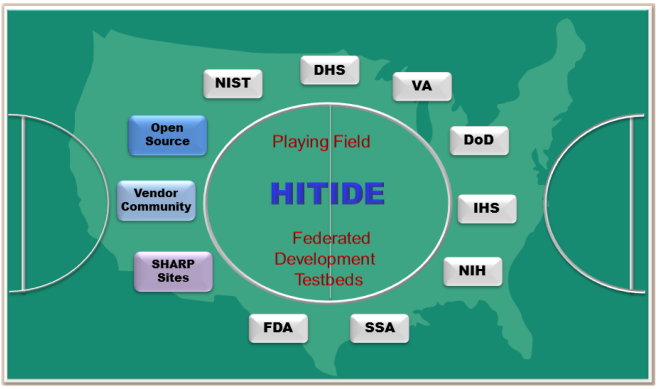
The genesis of the HITIDE concept was based first on the need for development testbeds to be available among all private and public partners and, second, on OSTP endorsing the endeavor to provide authorization across all the federal agencies. Historically, health information systems and their respective development testbeds have been sequestered within a particular organization (e.g., federal agency, hospital, clinic, medical center). Similarly, there has been limited adoption of health IT among private partners, requiring paper and faxed reporting of relevant clinical information.

The Department of Defense (DoD), Department of Veterans Affairs (VA), and Indian Health Service (IHS) are fortunate to have integrated enterprise electronic information systems with strong interoperability; however, as patients receive more care and services across health entities, *there is a greater need to create interoperability of data in order for the right information to be available at the point of care*. In order to compute on such data for the purposes of medication reconciliation, allergy checks, and other clinical decision support, as well as do aggregate analyses for population health and pandemic trending, *the need for robust interoperable health information systems is increasingly important*.

The ability to innovate and develop such interoperable systems has been constrained by firewalls, security architecture, network policies, culture, legislation, lack of standards, identity services, and many others. While the ONC has had significant success in promoting interoperability objectives (e.g., Nationwide Health Information Network [NwHIN], Beacon Communities, Strategic Health IT Advanced Research Projects [SHARP]) among private partners, even these initiatives have had patient correlation and network challenges and therefore could benefit from a federated development-test environment for multiple stakeholders.

Partnerships

In order to realize the true potential of HIT development in general, and leverage the Health Information Technology for Economic and Clinical Health (HITECH) and American Recovery and Reinvestment Act (ARRA) legal authorities, *HITIDE provides a vehicle that will accelerate partnering among federal agencies as well as private partners*. Federal partners may include: DoD, VA, IHS, ONC, Agency for Healthcare Research and Quality (AHRQ), Centers for Disease Control and Prevention (CDC), Food and Drug Administration (FDA), National Institute of Standards and Technology (NIST), NIH, National Library of Medicine (NLM) et al. Potential federal project partners include: NwHIN, SHARP, iEHR, Beacon Communities, VLER, Blue Button, etc. In addition, private sector vendors, open source contributors, and academic partners are also intended to be part of the larger collaboration community.



It is important to note that HITIDE represents the "playing field" for collaborators, and the partners determine the "projects." There are governance, architecture, standards recommendations, and other areas of interest for the HITIDE entity in order to meet legal and administrative requirements; however, consistent with the NITRD mission, *the primary purpose is to promote collaboration among federal and private partners by breaking down barriers and identifying opportunities jointly*.

The Path Forward

HITIDE engagements are envisioned to progress in three phases with initial activities including writing of, and agreement to, a working charter, leveraging existing agency testbed environments, using technologies such as virtual clouds, to foster interoperability and innovation among collaborating agencies, and then extending that collaboration to public/private partnerships.

The focus of the initial phase of HITIDE is collaboration among federal agencies with mature development infrastructures, as illustrated. Phase 1 will include creating the initial HITIDE environment leveraging agencies with existing, mature testbeds and collaboration sites; establishing work group procedural governance/processes to focus on test data, testing, policy and standards, and technical considerations (addressing the constraints of firewalls, security architecture network policies, standards, identity, etc.); identifying knowledge linkages; and identifying open source opportunities. HITIDE Phase 1 will likely be realized through the integration and support of the DoD/VA iEHR project, the VA's Open Source Electronic Health Record Agent (OSEHRA) project, and the ongoing VLER project, which leverages NwHIN. Phases 2 and 3 will focus on establishing relationships with SHARP grant projects and vendor/commercial partners, respectively.

HITIDE PHASES
Phase 1: Collaborate with Federal Agencies
Phase 2: Adopt Public/Private Academic Partnerships
Phase 3: Involve Vendor/Commercial Partners

In conjunction with these efforts there will be a NITRD interagency process that focuses on establishing governance and policy mechanisms to "raise all boats," and to engage in related federal activities aligned to common goals, such as adopting HIT standards for data exchange under the Federal Health Architecture (FHA).

Ensuring Success

Seeing the initiative through is the HITIDE Subgroup (SG), which focuses on advancing the development of interoperable HIT systems and new applications that operate across those systems through the coordinated creation and use of a common federated health IT innovation and development environment. Coordination activities include identifying resources and requirements, establishing priorities, sharing information on programs and R&D and testing activities, conducting joint planning, and developing and implementing joint strategies for the HITIDE environments operated by HITIDE SG members.

Expected Outcomes

HITIDE deliverables may include health IT web services, adapters, data exchanges, metadata and standards contributions, privacy and security techniques, etc. to enable interoperability in areas that include: medication reconciliation (drug-drug interaction/drug-allergy checks); clinical decision support; emergency preparedness and response; device interoperability (within a hospital context); and quality measures and reporting. While there are many challenges to achieving true interagency collaboration that advances innovation opportunities and new systems of care, providing an innovative, collaborative ecosystem as one of the key development resources can only accelerate success.

As a key facilitator for interdepartmental/commercial innovations and developments, HITIDE can provide a means to remove the constraints that currently exist between the DoD, VA, and commercial and academic innovators and environments. By facilitating a collaborative forum and structure for federated development and testing, each entity within HITIDE will serve as an innovation catalyst focused on identifying and developing responses to the nation's health care information technology needs.